



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2021-0699; Project Identifier AD-2020-01685-E]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain General Electric Company (GE) CF34-10E model turbofan engines. This proposed AD was prompted by a manufacturer investigation that revealed Teflon material in the A-sump oil strainer (strainer assembly) screen after several reports of in-flight shutdowns (IFSDs) and unscheduled engine removals (UERs). This proposed AD would require initial and repetitive visual inspections of the strainer assembly screen. As a terminating action to the initial and repetitive visual inspections, this proposed AD would require the replacement of the stationary oil seal at the No. 1 forward bearing. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: (202) 493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: (513) 552-3272; email: aviation.fleetsupport@ae.ge.com; website: www.ge.com. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0699; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Scott Stevenson, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7132; fax: (781) 238-7199; email: Scott.M.Stevenson@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under ADDRESSES. Include “Docket No. FAA-2021-0699; Project Identifier AD-2020-01685-E” at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Scott Stevenson, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA received reports of several IFSDs and UERs on airplanes operating with GE CF34-10E5, CF34-10E5A1, CF34-10E6, and CF34-10E7 model turbofan engines. After investigation, the manufacturer determined that the failures were the result of Teflon oil seals disbonding from the aluminum housing when used with either high thermal stability (HTS) or high performance capability (HPC) oils. The stationary oil seal deterioration resulted from the failure of the bonding adhesive, known as EA9658, which does not have the high temperature capabilities as designed and is negatively impacted by the use of HTS or HPC oils. This deterioration results in Teflon particles collecting in the strainer assembly. The manufacturer determined that CF34-10E2A1, CF34-10E6A1, and CF34-10E7-B model turbofan engines are also subject to this unsafe condition. This condition, if not addressed, could result in failure of the engine, in-flight shutdown, and loss of control of the airplane.

FAA’s Determination

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Related Service Information under 1 CFR Part 51

The FAA reviewed GE CF34-10E Service Bulletin 72-0365 R04, dated April 27, 2021. This service information specifies procedures for performing a visual inspection and a borescope inspection of the strainer assembly for Teflon particles. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

Proposed AD Requirements in this NPRM

This proposed AD would require initial and repetitive visual inspections of the strainer assembly screen. As a terminating action to the repetitive visual inspections, this proposed AD would require the replacement of the stationary oil seal at the No. 1 forward bearing.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 46 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this proposed AD:

Estimated costs

Action	Labor Cost	Parts Cost	Cost per product	Cost on U.S. operators
Inspect the strainer assembly screen	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$3,910
Replace the stationary oil seal	2 work-hours x \$85 per hour = \$170	\$8,628	\$8,798	\$404,708

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by

prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Would not affect intrastate aviation in Alaska, and
- (3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

General Electric Company: Docket No. FAA-2021-0699; Project Identifier AD-2020-01685-E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all General Electric Company (GE) CF34-10E2A1, CF34-10E5, CF34-10E5A1, CF34-10E6, CF34-10E6A1, CF34-10E7, and CF34-10E7-B model turbofan engines with a stationary oil seal, part number (P/N) B1316-00453 or P/N B1316-01274, installed at the No.1 forward bearing, that has used high thermal stability (HTS) oil or high performance capability (HPC) oil for 56 or more flight hours (FHs) during the life of the stationary oil seal.

(d) Subject

Joint Aircraft System Component (JASC) Code 7261, Turbine Engine Oil System.

(e) Unsafe Condition

This AD was prompted by investigation by the manufacturer that revealed Teflon material in the A-sump oil strainer (strainer assembly) screen after several reports of in-flight shutdowns and unscheduled engine removals. The FAA is issuing this AD to prevent failure of the stationary oil seal at the No.1 forward bearing. The unsafe condition, if not addressed, could result in failure of the engine, in-flight shutdown, and loss of control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) Within the compliance time specified in paragraph (g)(1)(i) or (ii) of this AD, as applicable, perform an initial visual inspection of the strainer assembly screen for Teflon material. Guidance on performing the visual inspections of the strainer assembly

screen can be found in the Accomplishment Instructions, paragraphs 3.A.(1)(d), of GE CF34-10E Service Bulletin (SB) 72-0365 R04, dated April 27, 2021.

(i) For an affected stationary oil seal having fewer than 2,250 flight hours (FHs) since new on the effective date of this AD, perform the initial inspection of the strainer assembly screen at the next engine shop visit after accumulating 2,250 FHs since new, but no later than 2,350 FHs since new.

(ii) For an affected stationary oil seal having 2,250 or more FHs since new on the effective date of this AD, perform the initial inspection of the strainer assembly screen within 100 FHs after the effective date of this AD.

(2) Thereafter, within the following compliance times, repeat the visual inspection of the strainer assembly screen required by paragraph (g)(1) of this AD:

(i) For an affected stationary oil seal having 2,250 to 7,000 FHs since new at the time of the last inspection, repeat the visual inspection every 750 FHs.

(ii) For an affected stationary oil seal having 7,001 to 10,000 FHs since new at the time of the last inspection, repeat the visual inspection every 375 FHs.

(iii) For an affected stationary oil seal having more than 10,000 FHs since new at the time of the last inspection, repeat the visual inspection every 100 FHs.

(3) If, based on the inspections required by paragraph (g)(1) or (2) of this AD, Teflon material is found in the strainer assembly screen, before further flight, remove the stationary oil seal at the No. 1 forward bearing from service and replace it with a part eligible for installation.

(4) Before an affected stationary oil seal accumulates 10,000 FHs since new or within 500 FHs after the effective date of this AD, whichever occurs later, remove the stationary oil seal at the No. 1 forward bearing from service and replace it with a part eligible for installation.

(h) Terminating Action

Removal of the stationary oil seal, P/N B1316-00453 or P/N B1316-01274, installed at the No. 1 forward bearing, and replacement with a part eligible for installation, constitutes terminating action for the initial and repetitive inspections required by paragraphs (g)(1) and (2) of this AD.

(i) Definition

For the purpose of this AD, a “part eligible for installation” is a stationary oil seal that has a P/N other than P/N B1316-00453 or P/N B1316-01274.

(j) Special Flight Permit

Special flight permits, as described in 14 CFR 21.197 and 21.199, are subject to the requirements of paragraph (j)(1) of this AD.

(1) Operators who are prohibited from further flight due to Teflon material found in the strainer assembly screen may perform a non-revenue ferry flight, consisting of no more than five cycles, to a location where the engine can be removed from service if operators perform the actions in Appendix – A, paragraph 4.A., GE CF34-10E Service Bulletin (SB) 72-0365 R04, dated April 27, 2021 and the engine still meets the criteria in paragraph 4.A. for flying an additional five cycles. This ferry flight must be performed with only essential flight crew, without passengers, and involve non-ETOPS operations.

(2) [Reserved]

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. You may email your request to ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(l) Related Information

(1) For more information about this AD, contact Scott Stevenson, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7132; fax: (781) 238-7199; email: Scott.M.Stevenson@faa.gov.

(2) For service information identified in this AD, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone:

(513) 552-3272; email: aviation.fleetsupport@ae.ge.com; website: www.ge.com. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

Issued on August 18, 2021.

Ross Landes, Deputy Director for Regulatory Operations,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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